# WASHING MACHINE
# TOP-LOADING TYPE

Basic Name : WA400*
(HUDSON PJT)
Basic Code : WA400PJHDWR/AA
Model Name : WA40J3000A*
(WA3000J PJT)
Model Code : WA40J3000AW/A2

# SERVICE Manual

## WASHING MACHINE (TOP-LOADING)

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# 1. SAFETY INSTRUCTIONS

## 1-1. SAFETY INSTRUCTIONS FOR SERVICE ENGINEERS

► Be sure to observe the following instructions to operate the product correctly and safely to prevent possible accidents and hazards while servicing.

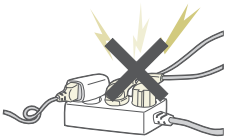
► Two types of safety symbols, Warning and Caution, are used in the safety instructions.

| | |
|---|---|
| ⚠ WARNING | **Hazards or unsafe practices that may result in severe personal injury or death.** |
| ⚠ CAUTION | **Hazards or unsafe practices that may result in minor personal injury or property damage.** |

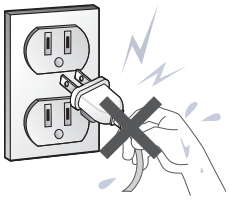
### ⚠ WARNING BEFORE SERVICING

- (When servicing electrical parts or harnesses) Make sure to disconnect the power plug before servicing.
  - Failing to do so may result in a risk of electric shock.

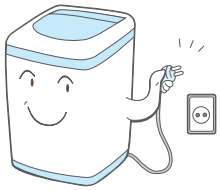
- Do not allow consumers to connect several appliances to a single power outlet at the same time.
  - There is a risk of fire due to overheating.



- When removing the power cord, make sure to hold the power plug when pulling the plug from the outlet.
  - Failing to do so may damage the plug and result in fire or electric shock.



- When the washing machine is not being used, make sure to disconnect the power plug from the power outlet.
  - Failing to do so may result in electric shock or fire due to lightning.



- Do not place or use gasoline, thinners, alcohol, or other flammable or explosive substances near the washing machine.
  - There is a risk of explosion and fire caused from electric sparks.

## ⚠ WARNING WHILE SERVICING

- Check if the power plug and outlet are damaged, flattened, cut or otherwise degraded.
  - ▸ If faulty, replace it immediately.
    Failing to do so may result in electric shock or fire.

- Completely remove any dust or foreign material from the housing, wiring and connection parts.
  - ▸ This will prevent a risk of fire due to tracking and electrical hazard..

- When connecting wires, make sure to connect them using the relevant connectors and check that they are completely properly.
  - ▸ If tape is used instead of the connectors, it may cause fire due to tracking.

- Make sure to discharge the PBA power terminals before starting the service.
  - ▸ Failing to do so may result in a high voltage electric shock.

- When replacing the heater, make sure to fasten the nut after ensuring that it is inserted into the bracket-heater.
  - ▸ If not inserted into the bracket-heater, it touches the drum and causes noise and electric leakage.

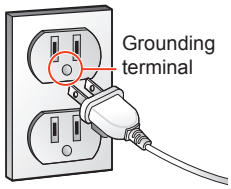
## ⚠ WARNING AFTER SERVICING

- Check the wiring.
  - ▸ Ensure that no wire touches a rotating part or a sharpened part of the electrical harness.

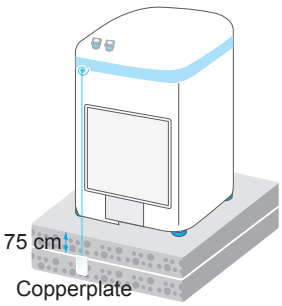
- Check for any water leakage.
  - ▸ Perform a test run for the washing machine using the standard course and check whether there is any water leakage through the floor section or the pipes.

- Do not allow consumers to repair or service any part of the washing machine themselves.
  - ▸ This may result in personal injury and shorten the product lifetime.

- If it seems that grounding is needed due to water or moisture, make sure to run grounding wires.
  (Check the grounding of the power outlet, and additionally ground it to a metallic water pipe.)
  - ▸ Failing to do so may result in electric shock due to electric leakage.




  [Running a grounding wire]
  - Twist a grounding wire (copper wire) two or three times around the tap.
  - If you connect the grounding wire to a copperplate, bury it 75 cm under the earth in a place with a lot of moisture.
    - ⚠ Do not connect the grounding wire to a gas pipe, plastic water pipe or telephone wire. There is a risk of electric shock or explosion.

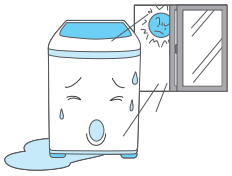


## ⚠ CAUTION BEFORE SERVICING

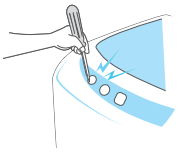
- Do not sprinkle water onto the washing machine directly when cleaning it.
  - This may result in electric shock or fire, and may shorten the product lifetime.

- Do not place any containers with water on the washing machine.
  - If the water is spilled, it may result in electric shock or fire. This will also shorten the product lifetime.

- Do not install the washing machine in a location exposed to snow or rain.
  - This may result in electric shock or fire, and shorten the product lifetime.



- Do not press a control button using a sharp tool or object.
  - This may result in electric shock or damage to the product.



## ⚠ CAUTION WHILE SERVICING

- When wiring a harness, make sure to seal it completely so no liquid can enter.
  - Make sure that they do not break when force is exerted.

- Check if there is any residue that shows that liquid entered the electric parts or harnesses.
  - If any liquid has entered into a part, replace it or completely remove any remaining moisture from it.

- If you need to place the washing machine on its back for servicing purposes, place a support(s) on the floor and lay it down carefully so its side is on the floor.
  - Do not lay it down on its front. This may result in the inside tub damaging parts.

## ⚠ CAUTION AFTER SERVICING

- Check the assembled status of the parts.
  - Now is a good time to inspect your work. Review all connections and wiring, including mounting hardware.

- Check the insulation resistance.
  - Disconnect the power cord from the power outlet and measure the insulation resistance between the power plug and the grounding wire of the washing machine. The value must be greater than 10MΩ when measured with a 500V DC Megger

- Check whether the washing machine is level the floor with respect to the original position of the washing machine prior to service.
  By doing this now will reduce for the need of customer dissatisfaction and redo call.
  - Vibrations can shorten the lifetime of the product.

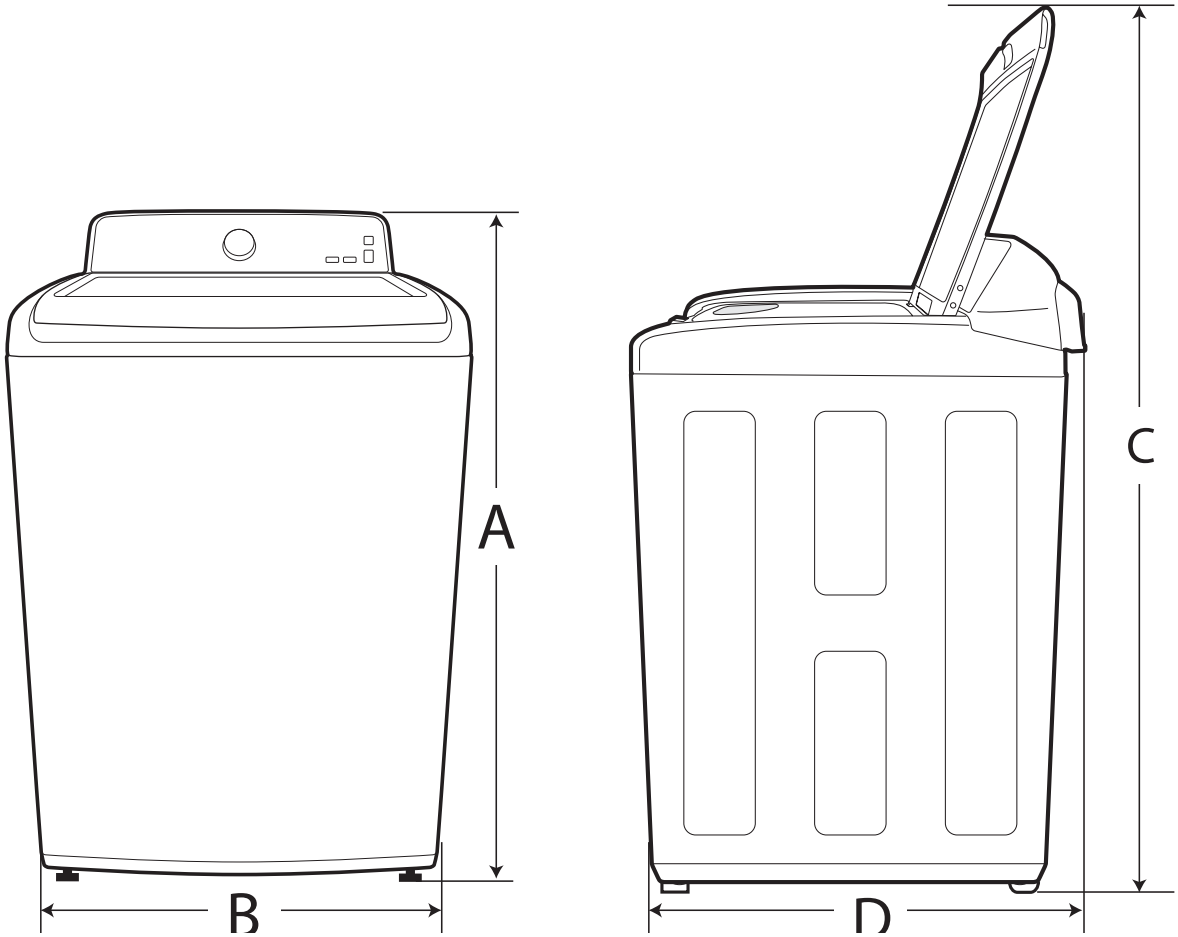
# 2. FEATURES AND SPECIFICATIONS

## 2-1. FEATURES

| Features | Description |
|---|---|
| The Great Capacity | • Even bulky garments and blankets get super clean. The Great capacity leaves enough room for a more thorough, cleaner wash. |
| EZ-Closed Lid | • The door is designed to close softly and prevent users from being injured |

## 2-2. SPECIFICATIONS

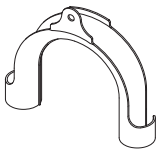
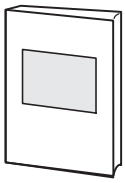
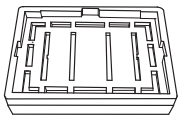
| TYPE | | TOP LOADING WASHER | |
|---|---|---|---|
| DIMENSION (Inches / cm) | A. Height | 43.9″ / 111.7cm | |
| | B. Width | 27.0″ / 68.6cm | |
| | C. Height with Door open | 58.1″ / 147.6cm | |
| | D. Depth | 29.3″ / 74.4cm | |
| WATER PRESSURE | | 20~116psi (137~800kPa) | |
| WEIGHT | | 55kg (121.3lb) | |
| CAPACITY | | 4.0cu.ft | |
| POWER CONSUMPTION | WASHING | 120V | 700W |
| | SPIN | 120V | 400W |
| | DRAIN | 120V | 80W |
| SPIN REVOLUTION | | 700rpm | |



## 2-3. DETAIL FEATURES

| Grade | | WA40J3000AW | | WA400PJHDWR | |
|---|---|---|---|---|---|
| Image | | | | | |
| Main Spec. | Capacity(DOE) | 4.0 | | 4.0 | |
| | AquaJet™ | No | | No | |
| | Diamond interior drum | Yes | | Yes | |
| | Pure Cycle™ | No | | Yes | |
| | Washing Cycles | 8 | | 9 | |
| | VRT® | No | | Yes | |
| | Pulsator material | PP | | PP | |
| | Max rpm | 700 | | 800 | |
| | Motor | AC Motor | | DIM Motor | |
| Design | Color | Neat White | | Neat White | |
| | Center display | No | | 88 | |
| | Jog Dial | Squall Jr Same | | Squall Jr Same | |
| | Main display | LED | | LED | |
| | LED color | Red | | Red | |
| | Door Lid TC | Non-glass | | Opaque | |
| | Easy door | Yes | | Yes | |
| | Frame | PCM | | PCM | |
| | Top Cover | Steel(EGI) + Painting | | Steel(EGI) + Painting | |
| Energy | | Estimated Yearly Energy Cost | 17 | MEF (cf/kWh/cycle) | 2.41 |
| | | Estimated Yearly Electricity Use | 267 | WF (gal/cycle/cf) | 3.70 |
| | | Energy consumption | 350 | EnergyGuide (kWh/year) | 163 |

## 2-4. OPTIONS SPECIFICATIONS

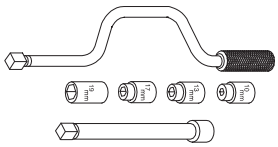
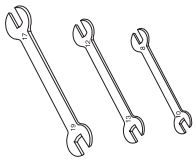
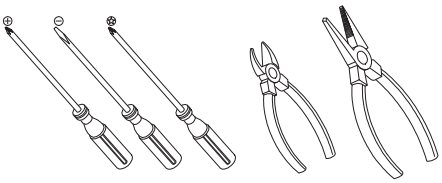
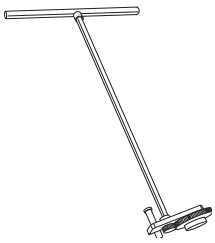
| Item | Item Name | Code No. | Remark |
|---|---|---|---|
|  | HOSE-HANGER | DC61-00224A | Default |
|  | MANUAL-BOOK | DC68-03520A | Default |
| | CABLE TIE | 6501-000121 | Default |
| | CAP W.V | DC61-10449Q | Default |
|  | ASSY-LEG SUPPORT | DC97-14095A | Service |

Note

- Customer can purchase Water supply, drain hoses and assy leg support from a service center.

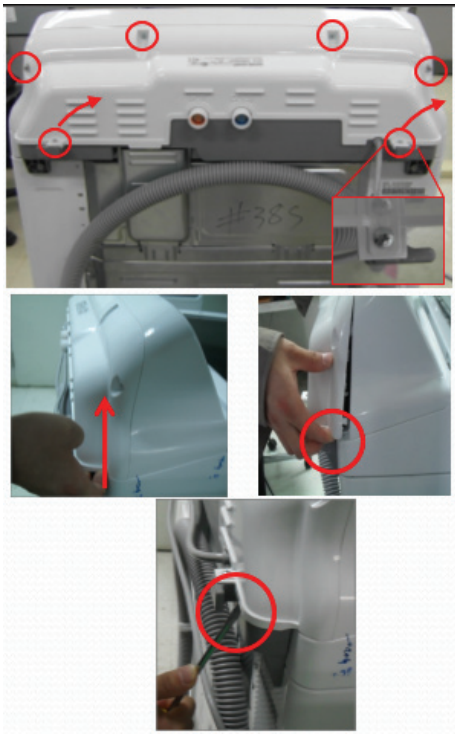
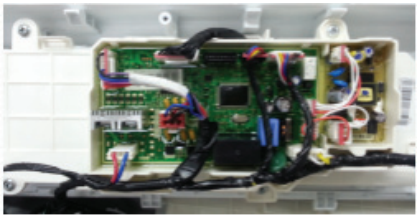
# 3. DISASSEMBLY AND REASSEMBLY

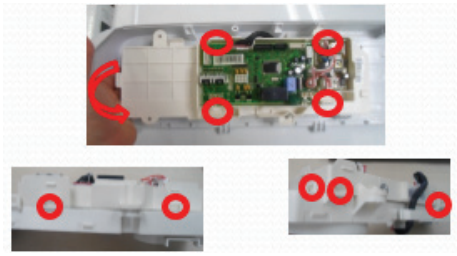
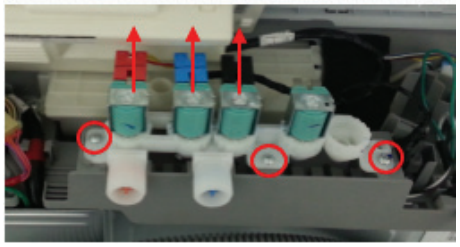
## 3-1. TOOLS FOR DISASSEMBLY AND REASSEMBLY

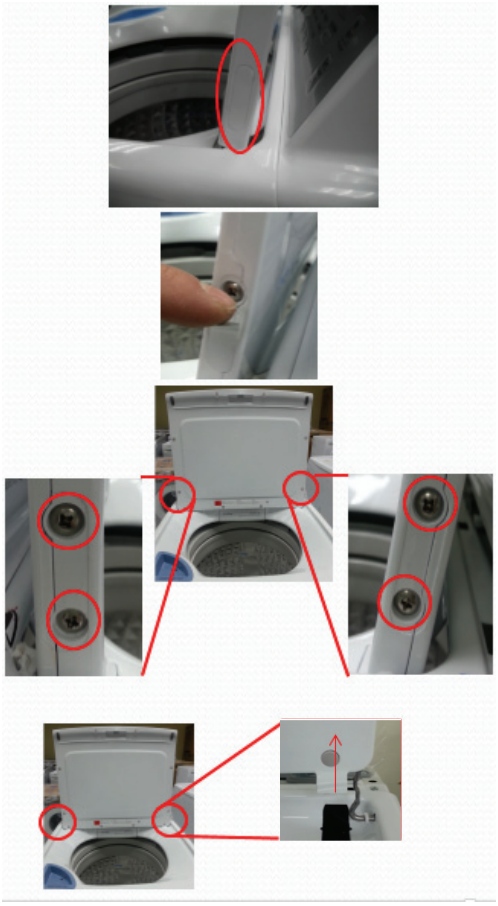
| Tool | | Type | Remarks |
|---|---|---|---|
|  | Box driver | 10mm<br>17mm | Tub(16), Fixer screw(5), Motor(1), Balance(5)<br>Damper(2), Damper(friction 1) |
|  | Double-ended spanner | 10mm<br>17mm | Replaced by box driver<br>Leg |
| | Vice pliers | | A Tool for protecting empty turning of bolt or abrasion from using box driver<br>For disassembly of Spin drum |
|  | Others<br>(screwdriver, nipper, long nose pliers) | | Common tools for servicing |
|  | JIG for the ASSY SPIN BASKET | | |

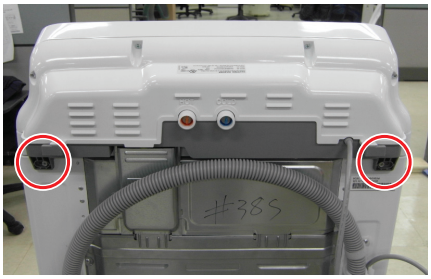
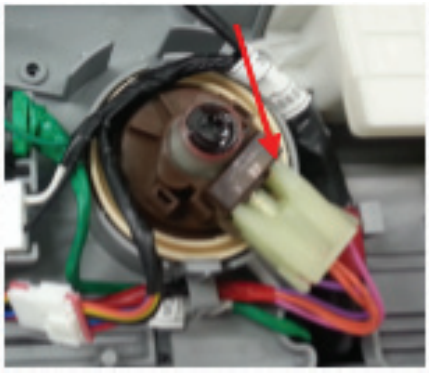
## 3-2. STANDARD DISASSEMBLY DRAWINGS

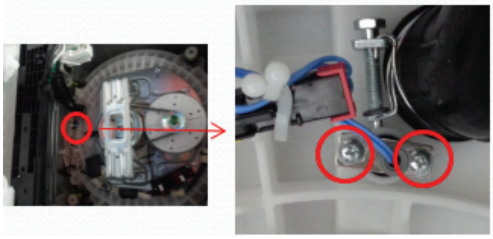
► This is a standard disassembly diagram and may differ from the actual product.
Use this material as a reference when disassembling and reassembling the product.

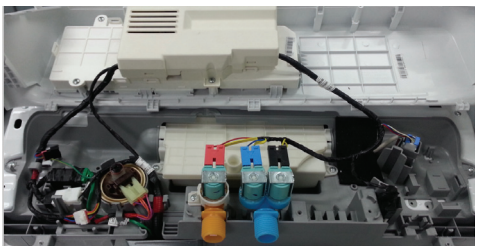
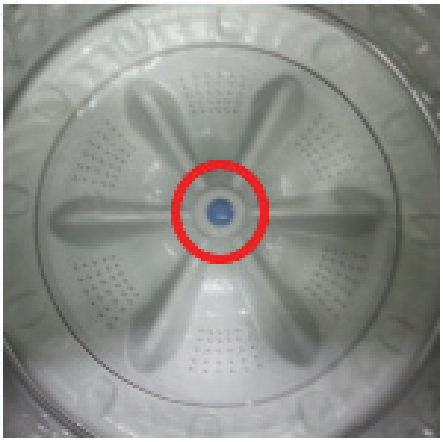
| Part | Figure | Description |
|---|---|---|
| Sub and Main PCB |  | 1. Remove the 6 screws holding the control panel assembly.<br>2. Separate the both hooks. (Left and Right)<br>3. Separate the cover panel upward.<br>If it is difficult to disassemble, use the (-) driver to disassemble hooks.<br>(Be careful damage of hooks.) |
| | | 4. Remove the 2 screws holding the control panel assembly and turn the panel over. |
| | | 5. Pull the Encoder-Knob to separate it and then remove the 4 fixing screws.<br>When reassembling the PCB, take care that you do not damage the control-panel fixing hook. After replacing the sub PCB, check the key operation. |
| | | 6. Pull and lift up the cover PCB(m). |
| |  | 7. Separate the cover pcb(m) and the wires connected to the main PBA.<br>After reassembling the housing, check if the wires are properly connected. When disassembling and reassembling the housing, take care that you do not damage the part. |

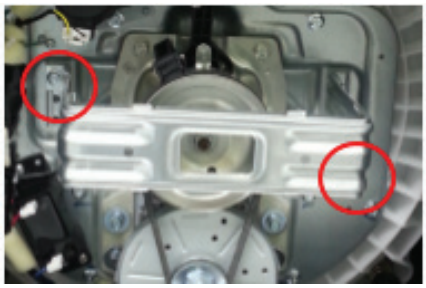
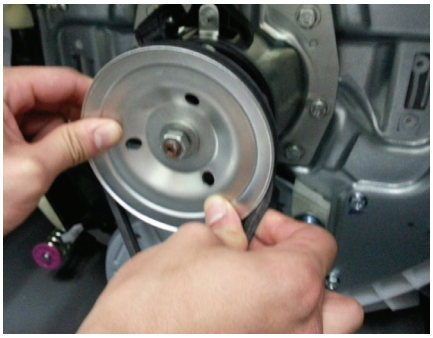
| Part | Figure | Description |
|---|---|---|
| **Sub and Main PCB** |  | 8. Pull the PCB (s).<br>9. Separate 5 hooks with – driver. |
| **Water Valve** |  | 1. After separating the control panel, separate the water-valve housing.<br>2. Remove the 3 fixing screws. |

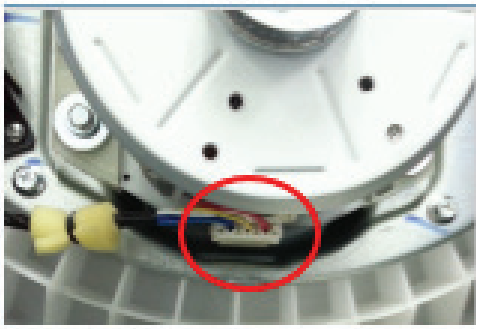
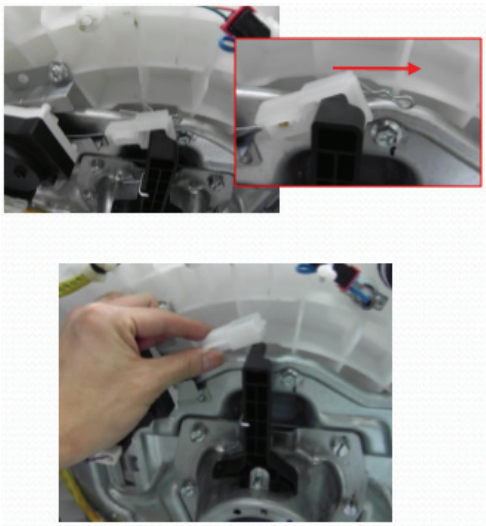
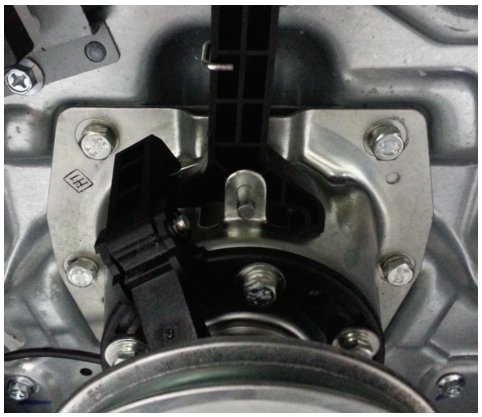
| Part | Figure | Description |
|---|---|---|
| **Door** |  | 1. Remove the 2 inlay tapes.<br>2. Remove the 4 screws holding the door lid TC and separate the door. |

| Part | Figure | Description |
|---|---|---|
| Top Cover/ Door Switch |  | 1. Remove the 2 screws from the cover plate.<br>2. Separate the control panel assembly. |
| | | 3. Separate the water valve, the pressure switch and the filter EMI housing.<br>Separate the housing to prevent stress and damage to the wire-harness.<br>4. Separate the main wire harness, the pressure switch hose clip , Grounding screw . |
| | | 5. Separate the top cover assembly by lifting and pushing ahead the top part of the assembly.<br>6. Remove the 2 screws and separate 2 WIRE VINYL. |
| Sensor Pressure Switch |  | 1. Disassemble the control panel assembly.<br>2. Separate the pressure switch housing. |
| | | 3. Before separating the hose, release the clip.<br>When releasing the clip, take care that you do not tear the hose. |

| Part | Figure | Description |
|---|---|---|
| **Drain-Pump** | | 1. Separate the back cover.<br>2. Separate 2 clamps.<br>3. Remove cover pump.<br>4. Separate 2 pins.<br>5. Remove the 13 screws in base.<br>6. Remove the 3 screws.<br>7. Screws are separated by '+' shape hand driver. |
| **Thermistor** |  | 1. Remove the 2 screws. |

| Part | Figure | Description |
|---|---|---|
| Clutch (continued) |  | 1. Separate the top cover assembly by lifting and pushing ahead the top part of the assembly.<br>2. Remove the 2 screws holding the panel control Separate all the wires connected to the housing. |
| | | 3. Remove the 8 screws fixing the tub-cover and separate the tub-cover. |
| |  | 4. Separate the pulsator-cap by inserting the tip of a (-) screwdriver between the pulsator-cap and the pulsator. |
| | | 5. Remove the bolt holding the pulsator with a 10mm wrench according to the direction of arrow. |

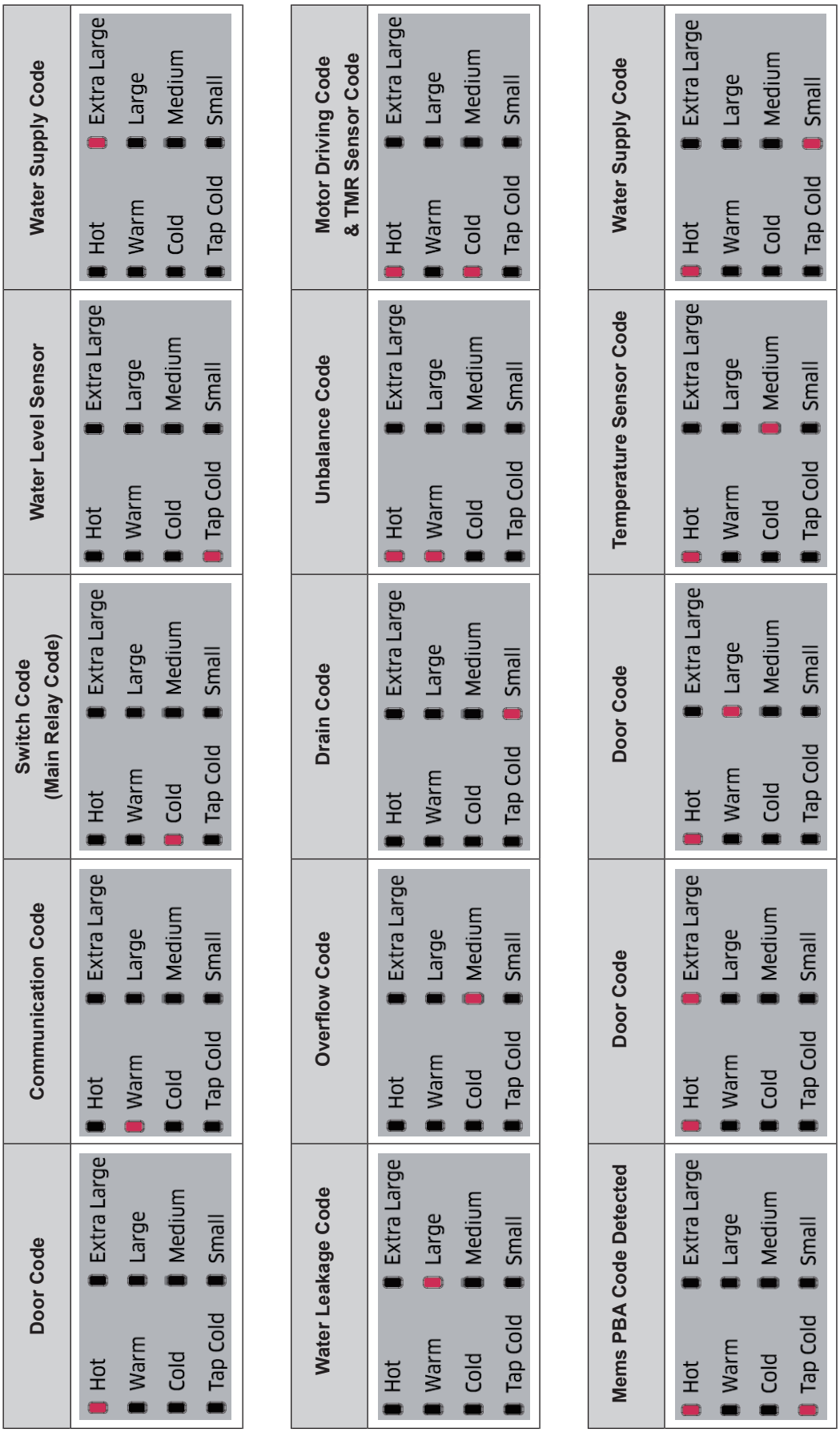
| Part | Figure | Description |
|---|---|---|
| Clutch (continued) | | 6. Remove the shaft with the jig wrench.<br>- Release the nut in a clockwise direction.<br>- Fasten the nut in a counterclockwise direction. |
| |  | 7. Place the main body so that the front frame faces upward and remove the 2 bolts holding the saddle with a 10mm wrench.<br>When you place the washer on the floor, take care that you do not damage or scratch the product. |
| |  | 8. Remove the belt.<br>When you replace belt, check belt tension certainly. |
| | | 9. Remove the NUT with a 17mm wrench and remove Assy pulley motor. |

| Part | Figure | Description |
|---|---|---|
| Clutch (continued) |  | 10. Separate the 1 marked housings. |
| |  | 11. Separate the clip. |
| |  | 12. Remove the 6 screws fixing the clutch assembly and then separate the clutch assembly. |
| TMR sensor | | 1. Remove the 2 screws with a 10mm spanner. |

Reassembly procedures are in the reverse order of dissasembly procedures.

# 4. TROUBLESHOOTING

## 4-1. BEFORE INFORMATION MODES, PLEASE INSERT THE BELOW TABLE.



| Door Code | Communication Code | Switch Code (Main Relay Code) | Water Level Sensor | Water Supply Code |
|---|---|---|---|---|
| Hot / Extra Large | Hot / Extra Large | Hot / Extra Large | Hot / Extra Large | Hot / Extra Large |
| Warm / Large | Warm / Large | Warm / Large | Warm / Large | Warm / Large |
| Cold / Medium | Cold / Medium | Cold / Medium | Cold / Medium | Cold / Medium |
| Tap Cold / Small | Tap Cold / Small | Tap Cold / Small | Tap Cold / Small | Tap Cold / Small |

| Water Leakage Code | Overflow Code | Drain Code | Unbalance Code | Motor Driving Code & TMR Sensor Code |
|---|---|---|---|---|
| Hot / Extra Large | Hot / Extra Large | Hot / Extra Large | Hot / Extra Large | Hot / Extra Large |
| Warm / Large | Warm / Large | Warm / Large | Warm / Large | Warm / Large |
| Cold / Medium | Cold / Medium | Cold / Medium | Cold / Medium | Cold / Medium |
| Tap Cold / Small | Tap Cold / Small | Tap Cold / Small | Tap Cold / Small | Tap Cold / Small |

| Mems PBA Code Detected | Door Code | Door Code | Temperature Sensor Code | Water Supply Code |
|---|---|---|---|---|
| Hot / Extra Large | Hot / Extra Large | Hot / Extra Large | Hot / Extra Large | Hot / Extra Large |
| Warm / Large | Warm / Large | Warm / Large | Warm / Large | Warm / Large |
| Cold / Medium | Cold / Medium | Cold / Medium | Cold / Medium | Cold / Medium |
| Tap Cold / Small | Tap Cold / Small | Tap Cold / Small | Tap Cold / Small | Tap Cold / Small |

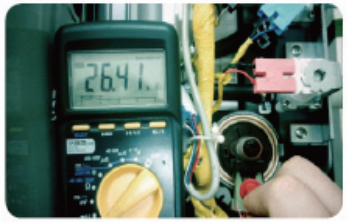
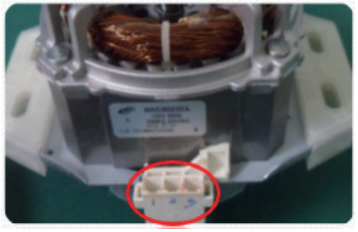
## 4-2. INFORMATION MODES

► **This is a washer integrated information mode. For detailed information, refer to the general repair scripts.**

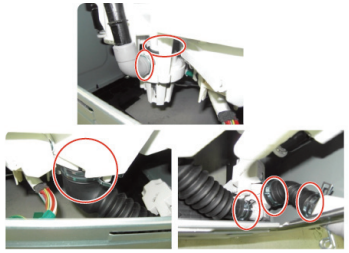
| Code Type | For USA | Causes | Remarks |
|---|---|---|---|
| **Water Level Sensor** | Tap Cold LED Flash | - The part of the hose where the water level sensor is located is damaged (punctured).<br>- The hose is clogged with foreign material.<br>- The hose is folded.<br>- Too much lubricant has been applied to the insertion part of the air hose.<br>- Hose engagement Code. (disengaged)<br>- Part fault. (Faulty internal soldering)<br>- The water level sensor terminal is disengaged.<br>- Main PBA fault. | |
| **Motor Driving Code and TMR Sensor Code** | Hot&Cold LED Flash | - The PBA connector terminal is not connected.<br>- The motor spin net is not engaged.<br>- The motor's internal coil is damaged. (short-circuited or cut)<br>- The TMR sensor terminal is not connected.<br>- Foreign material (a screw) has entered the motor.<br>- Motor overloaded due to too much laundry. (Non-sensing)<br>- The motor TMR sensor terminal is not connected.<br>- PBA fault.<br>- The motor driving Code from the PBA is weak.<br>Unstable relay operation, etc.<br>- This occurs due to erroneous operating signals from the motor TMR sensor.<br>- The IPM terminal of the main PBA is not connected.<br>- The DD motor cover is out of place.<br>- The PCB housing terminal is not connected.<br>- PBA fault.<br>- DD motor fault. | This Code occurs because of restrained revolutions.<br><br>This Code occurs when an interference is generated due to too much laundry, etc. |
| **Water Supply Code** | Extra Large LED Flash | - Foreign material is entering the water supply valve.<br>- The water supply valve terminal is not connected. (Wire disconnected)<br>- The warm water and rinse connectors are wrongly connected to each other.<br>- This occurs if the PCB terminal from the drain hose to the detergent drawer is not connected. Check whether the transparent hose is folded or torn. | |
| | Hot & Small LED Flash | - The cold and warm water supply hoses are wrongly engaged into each other.<br>- The temperature of the water supplied through the dry valve during a dry cycle is sensed as higher than 70 ˚C.<br>- The water temperature is sensed as higher than 50 ˚C in the Wool or Lingerie courses. | The water supplied for 1 minute drying the drying cycle is 0.3 ~ 0.4 L. |
| **Drain Code** | Small LED Flash | - The pump motor impeller is damaged internally.<br>- The wrong voltage is supplied to the parts.<br>- Part fault.<br>- This occurs due to freezing in the winter season.<br>- The drain hose is clogged. (Injection Code, foreign material)<br>- Clogged with foreign material.<br>- The water pump terminal is not connected: rubber band, bills, cotton, hair pins, coins have collected inside the drain pump ASSY. | |
| **Communication Code** | Warm LED Flash | - The signals between the sub and main PBAs are not sensed because of commuication Code.<br>- Check the connector connections between the sub and main PBAs carefully.<br>→ Check for incorrect or loose connections, etc.<br>- Remove the sub PBA C/Panel and check for any faulty soldering. | |

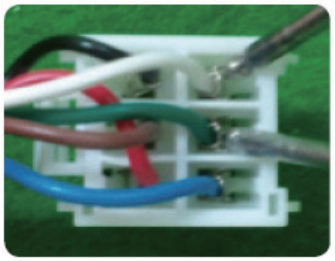
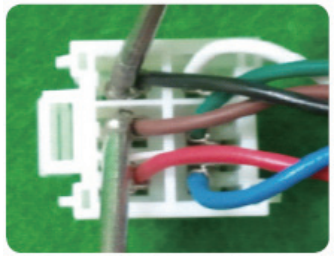
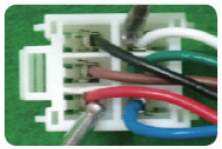
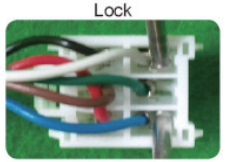
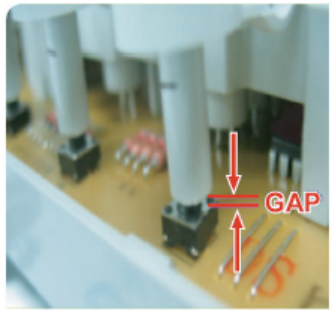
| Code Type | For USA | Causes | Remarks |
|---|---|---|---|
| **Switch Code (Main Relay Code)** | Cold LED Flash | - The Power button is pressed continually. (for more than 12 seconds).<br>- A switch is jammed or stuck due to be pressed unevenly due to deformation of the control panel or button.<br>- This Code may occur when the screws that hold the sub PBA in place are tightened too much.<br>- A button other than the Power button is continually pressed. (for more than 30 seconds).<br>- Deformation of an internal plastic injection part.<br>- A screw for assembling the sub PBA is tightened too much. | |
| **Door Code** | Hot LED Flash | - A switch contact Code because of a deformation of the door hook.<br>- When the door is pulled by force. | When the door is not opened after the door open operation. |
| | | - This occurs in the Boil wash because the door is pushed due to a pressure difference from internal temperature changes. | When the door is not locked after the door close operation. |
| | Hot&Extra Large LED Flash | - The door lock switch terminal is connected incorrectly.<br>- The door lock switch terminal is broken.<br>- This occurs intermittently because of an electric wire leakage<br>- Main PCB fault. | |
| | Hot&Large LED Flash | - This occurs if the Power switch is turned on/off continually and too much heat is generated (This Code is difficult to be reproduced.) | |
| **Water Leakage Code** | Large LED Flash | - Heater engagement fault. (out of place)<br>- The air hose is out of place and water leakage occurs during the spin cycle.<br>- The tub back at the safety bolts fixing part is broken.<br>- Water leakage occurs at the front with foaming because of too much detergent.<br>- Water leakage occurs because the connecting hose to the detergent drawer is connected incorrectly.<br>- The drain pump filter cover is engaged incorrectly.<br>- Water leakage occurs at the drain hose.<br>- The duct condensing holding screws are worn.<br>- The nozzle-diaphragm is engaged in the opposite direction or the rubber packaging is omitted.<br>- Water leakage occurs because the screws that hold the tub back and front in place are fastened incorrectly.<br>- The leakage sensor is faulty. | |
| **Overflow Code** | Medium LED Flash | - Water is supplied continually because the water level detection does not work.<br>- Because the drain hose is clogged and there is an injection Code (at a narrow section), the water level detection does not work and water is supplied continually.<br>- Water is supplied continually because of freezing or because there is foreign material in the water supply valve.<br>- This Code may occur when the water level sensor is degraded. | This Code occurs because the water level sensor terminal is out of place. |
| **Unbalance Code** | Hot&Warm LED Flash | - As laundry causes this Code, check the laundry.<br>- Find the reason for the unbalance and solve it as directed in the user manual. | |
| **Mems PBA Code Detected** | Hot&Tap Cold LED Flash | - Code detected in the Mems PBA or data Code detected. Check the wire connections.<br>Replace if necessary.<br>1. Check the wire connections.<br>2. Replace the Mems PBA.<br>3. Main PBA wire connection Code or PBA's silver nano part malfunction. Replace if necessary. | |
| **Temperature Sensor Code** | Hot & Medium LED flash | - The washing heater sensor in the tub has an Code. (Contact Code or temperature sensor fault)<br>- The connector is connected incorrectly or is disconnected.<br>- If the water level sensor operates without water because the water is frozen or for any other reason and the temperature sensor engaged at the bottom to prevent overheating for the washing heater detects a temperature of 100 to 150 ˚C, the washing machine turns the input power off. | Heater sensor fault:<br>When the connector is connected incorrectly or has a wire disconnected or contact Code. |

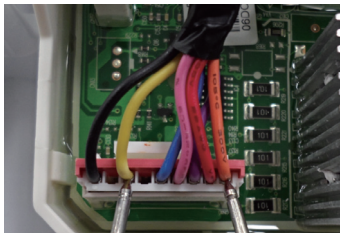
► These are common troubleshooting procedures for each drum-type washer Code mode. For detailed information, refer to the general repair scripts.

| Symptom | Check Code | Countermeasure | Troubleshooting Procedure | Measurement Picture |
|---|---|---|---|---|
| Water Level Sensor | ► Tap Cold LED Flash | Check if the water level sensor is defective. | • Check the water level sensor terminal connections.<br>• Check the part code of the water level sensor, because if an incorrect part is used, an abnormal operation may occur. (Abnormal operation)<br>• If the water level sensor is defective, replace it.<br>• If no problems were found for all of the procedures above, replace the PBA. |  <br>► Check the water level sensor frequency.<br>1. Check it after the water level sensor and the connector are connected.<br>Checking Part : Blue Color Wire Oragne Color Wire<br>2. Frequency: Approx. 26.4 KHz without water (Min 25.9KHz) |
| | | Check if the water level sensor terminal is properly connected. | | |
| | | Check if the water level sensor hose is broken. | | |
| | | This may occur when the main PCB is defective. | | |
| Washing Motor Defect | ► Hot&Cold LED Flash | This may occur when the washing motor is defective. | • Check the motor connector terminal connections.<br>• Check if the Motor Cover State is damaged.<br>• Check if the coil is broken due to moisture from any alien substance.<br>• If the PBA control circuit is defective, replace the PBA. |  <br>► Check the motor Winding Coil<br>• Plug out the connector and read resistances:<br>Pin1 between pin2: 5.4±%10 Ω<br>Pin 2 between pin3:5.4±%10 Ω |
| | | Check if the washing Motor Rotor/State is defective or not. | | |
| | | This may occur when the main PCB is defective. | | |

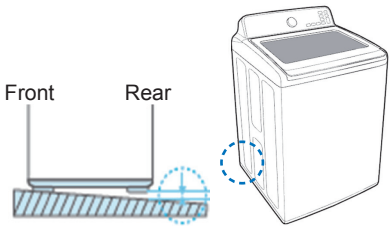
| Code Type | Code Mode | Causes | Corrective Actions | Description of Photo |
|---|---|---|---|---|
| Water Supply Code | ► Extra Large LED Flash | This may occur when the water supply valve is defective. | • If the water supply valve is broken, replace the valve.<br>• Check if the water supply is blocked due to an alien substance in the valve or check if the water is supplied to the machine. If a problem is found, take the appropriate countermeasure.<br>• Check if the water supply is blocked due to the water being frozen.<br>• If the PBA Relay malfunctions, replace the PBA. | <br>1. Measure the resistance of the water supply valve.<br>- Resistance : 0.9KΩ to 1.1KΩ between the terminals of the Water Supply Valve.<br>2. Check whether there is foreign material in the Water supply valve filter. |
| | ► Hot&Small LED Flash | This may occur when the main PCB is defective. | | |
| | | This may occur due to frozen water. | | |
| Drain Code | ► Small LED Flash | This may occur when the drain pump is defective. | • Check if there is any alien substance inside the draining pump motor.<br>• Check the natural drain in the same manner.<br>• Check if there are any incorrect connections or broken wires.<br>• If the machine malfunctions intermittently when the wash tub water temperature is high, replace the pump.<br>• If the motor stops due to the water being frozen in winter, remove the frozen water referring to the relevant repair procedures. | <br>Check the drain pump resistance.<br>(Resistance : 13.5 ~ 16.5 Ω) |
| | | This may occur due to frozen water. | | |
| | | Check if there is any alien substance inside the draining pump. | | |
| | | This may occur when the main PCB is defective. | | |
| Communication Code | ► Warm LED Flash | The signals between the sub and main PBAs are not sensed. | • Check the wire connections and terminal contacts between the sub and main PBAs.<br>• Check for disconnected wires.<br>• Check whether the sub PBA is short-circuited because of moisture.<br>• If the main PBA's communication circuit is faulty, replace it. | - |
| | | Incorrect wire connections between the sub and main PBAs. | | |

| Symptom | Check Code | Countermeasure | Troubleshooting Procedure | Measurement Picture |
|---|---|---|---|---|
| Water Leakage Code | ► Large LED Flash | This may occur when an alien substance is in the DV Case.<br>This may occur due to a defect of the product's internal hose or from the part assembly. | • Since this occurs when an alien substance is in the Draining Bellows, for natural draining, remove the alien substance.<br>• If the drain motor is defective, replace the motor.<br>• Check if the water leaks from the tub connection part. |  <br>Check if there is any alien substance in the Draining Bellows.<br>Check if there is any alien substance such as underwear wire, coins, etc. |
| Unbalance Code | ► Hot&Warm LED Flash | This may occur due to the laundry being unevenly distributed. | • Check the laundry type and check if the laundry load is unbalanced.<br>- Make sure to check if there is any laundry present that absorbs a lot of water even if its volume is small and explain the problem comprehensively, if necessary. | - |
| Mems PBA Detected | ► Hot&Tap Cold LED Flash | This may occur due to disconnection.<br>This may occur when the Mems PBA is defective. | • Check wire connections.<br>• Replace the Mems PBA.<br>• Replace Mems PBA because of the main PBA wire disconnection Code or PBA silver nano part malfunction. | |
| Overflow Code | ► Medium LED Flash | This may occur when the water level sensor is defective.<br>This may occur when water is supplied continuously due to freezing or foreign materials in the water supply valve. | • The water level sensor is replaced. | |

| Symptom | Check Code | Countermeasure | Troubleshooting Procedure | Measurement Picture |
|---|---|---|---|---|
| Door Code | ► Hot LED Flash | This may occur when the door switch is defective.<br>This may occur when the main PCB is defective. | • Check if these LED flash during the boiling course.<br>• As these LED flash because the door is opened, close the door.<br>• Since 120V power is connected, check if the power cord is disconnected or check the insulation status and repair it if necessary.<br>• If the main PBA door detection circuit is defective, replace it. |  <br>1. Check the resistance for Reed SW (Checking Part :White-Green Wire)<br>- Resistance: Approx 0.2Ω between the terminals of Reed SW. |
| | ► Hot&Large LED Flash | | |  <br>2. Check the resistance for Motor (Checking Part : Black-Brown Wire)<br>- Resistance: 33Ω to 46Ω between the terminals of Motor. |
| | ► Hot&Extra Large LED Flash | The door lock switch unit is not inserted.<br>The door lock switch unit is damaged.<br>The wire is disconnected.<br>The door lock switch unit is defective.<br>This may occur due to a defect of the main PCB. | • Check whether the door lock switch unit is inserted.<br>• Check whether the door lock switch unit is damaged.<br>• Check the disconnection of the wire.<br>• If the door lock switch unit is defective, replace it.<br>• If the main PCB is defective, replace it. |  <br>Lock<br>  <br>Unlock<br>3. Check the resistance for Lock/ Unlock Contact (Checking Part : Lock White-Red Wire Unlock White-Blue Wire)<br>- Resistance: Resistance: Approx 0.2Ω between the terminals of Contact.<br>Check the Door Lock/Unlock state. |
| | ► Hot Large LED Flash | | | |
| Switch Code (Main Relay Code) | ► Cold LED Flash | The Power button is continually pressed.<br>A button other than the Power button is continually pressed. | • Check whether either the Power switch or a tact switch is continually pressed.<br>• Check whether the service PBA holding screws are fastened too tight. If they are fastened too tight, loosen them a little.<br>• If the main PBA switching IC on/off Code has occurred, replace the main PBA.<br>• The “Cold LED ” flashes if the main relay connections are incorrect. Check the connections. If there is no flashing in the connections, replace the main PBA. |  <br><br>Check the contact between the control panel buttons and their corresponding tact switch.<br>- There must be a gap between a control panel button and its corresponding micro switch.<br>Otherwise, an Code occurs after approx. 30 seconds has passed. |

| Symptom | Check Code | Countermeasure | Troubleshooting Procedure | Measurement Picture |
|---|---|---|---|---|
| Temperature Sensor Code | ► Hot&Medium LED Flash | • Heater fault<br>• Thermistor fault<br>• Poor physical connection | • Check whether Thermistor is inserted.<br>• Check whether Thermistor is damaged.<br>• Check the disconnection of the wire.<br>• If Thermistor is defective, replace it.<br>• If the main PCB is defective, replace it. |  Check Resistance for Thermistor (Checking part : Pin #3 and #9 of CN10)<br>•Resistance : Approx 47kΩ (at 25ºC) between the terminals of Thermistor. |

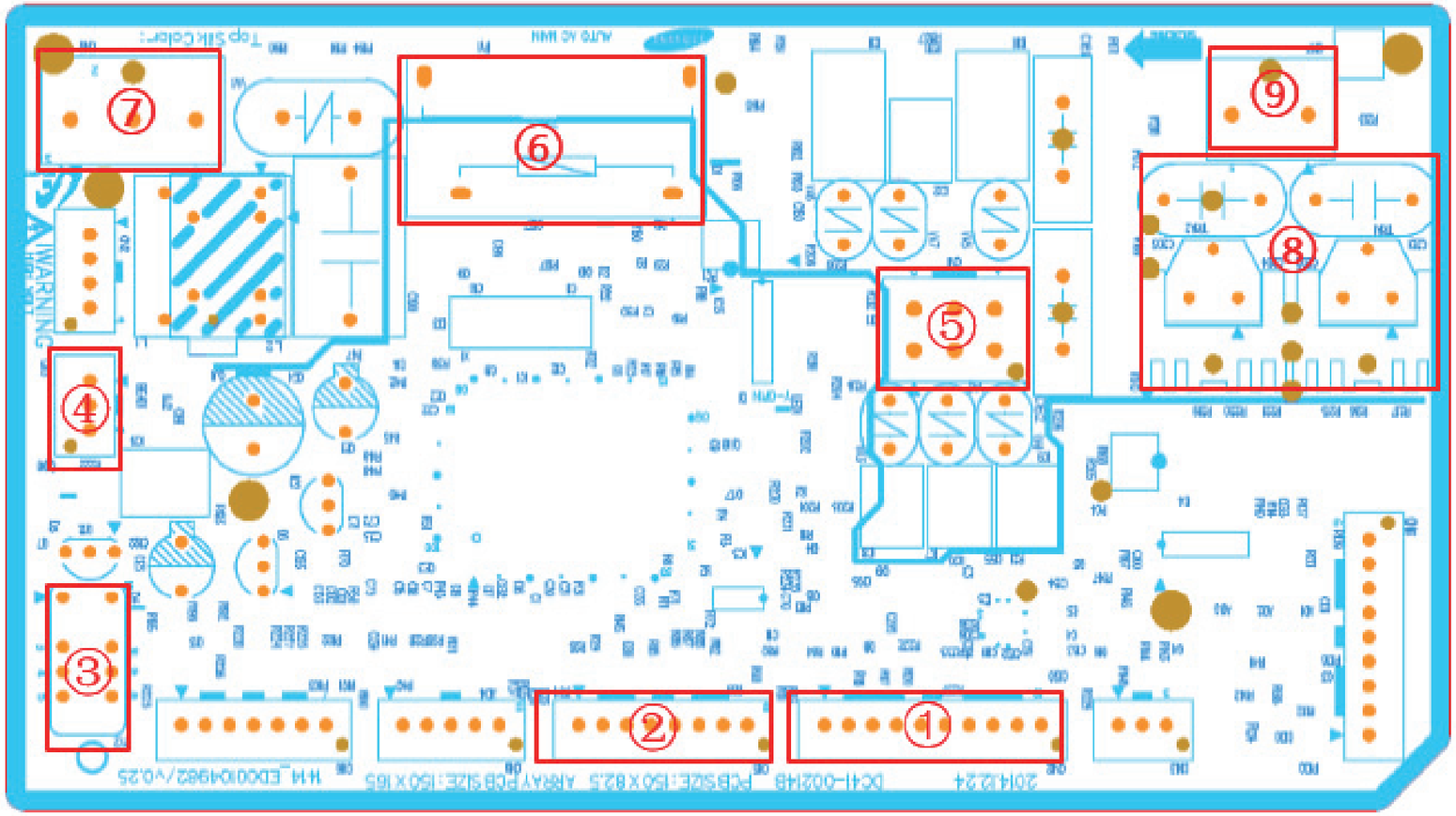
## 4-4. THE INSTALLATION FOR LEVELING

| Problem Type | Causes | Corrective Actions |
|---|---|---|
| If the rear level of the floor is lower than the front level of the floor, it can't be leveled.<br>  <br> | • Only use the front legs to adjust the level. | • Use the leg supports to adjust the level of the rear.<br>• If the floor is on a steeply slope, please use the additional leg supports.<br> <br>• Customer can purchase the leg supports from a service center. |

# 5. PCB DIAGRAM

## 5-1. MAIN PCB

► This Document can not be used without Samsung's authorization.

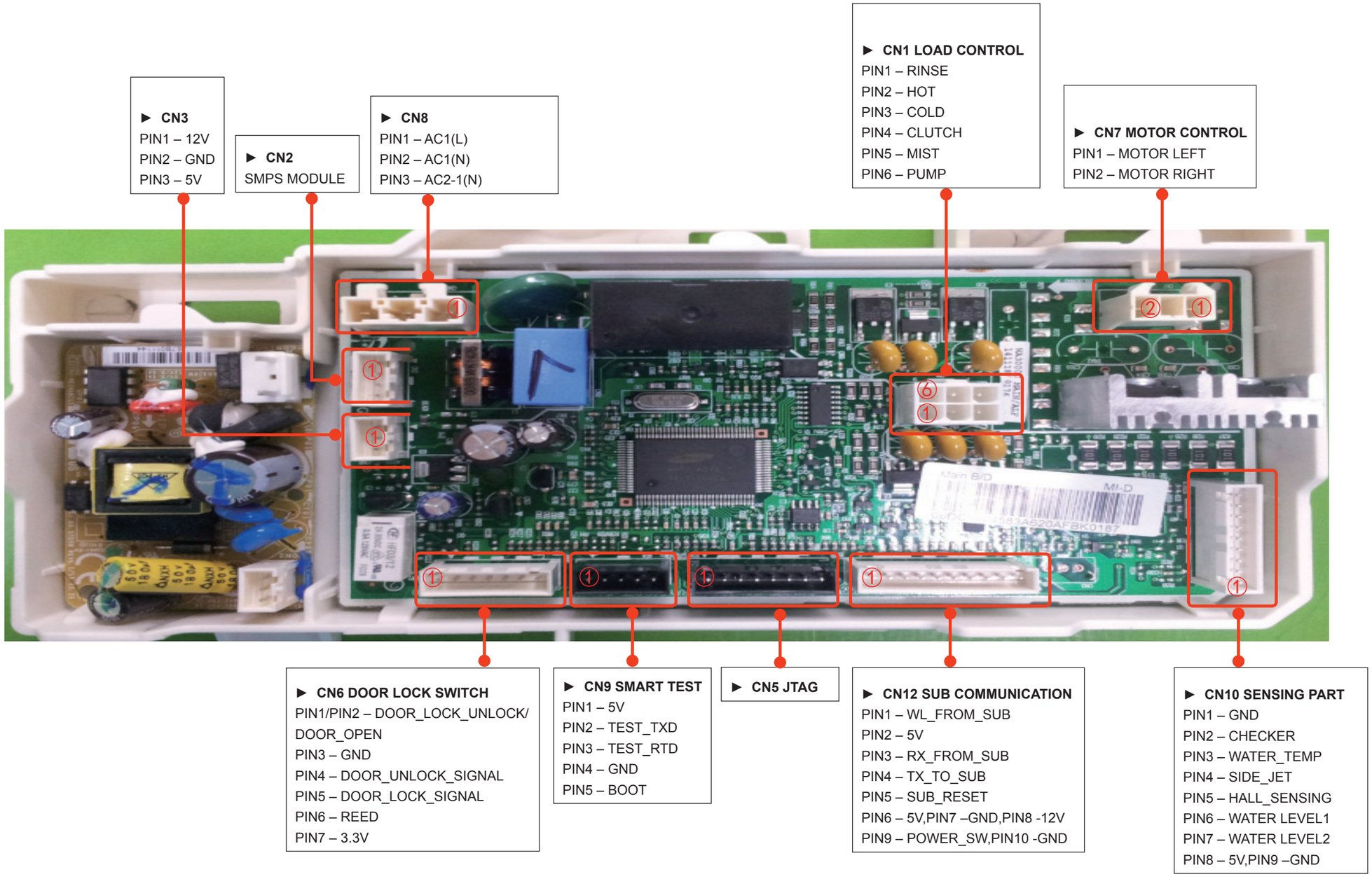



| Location | Part No. | Function | Description |
|---|---|---|---|
| 1 | CN12 | SUB COMMUNICATION | communication with sub PBA |
| 2 | CN5 | JTAG | writing port |
| 3 | RY2 | DOOR LOCK | drive the door lock switch |
| 4 | CN3 | SMPS MODULE | Power Cord AC2(N) AC1(L) |
| 5 | CN1 | LOAD DRIVE | drive the load |

| Location | Part No. | Function | Description |
|---|---|---|---|
| 6 | RY1 | LOAD CONTROL | control the load |
| 7 | CN8 | POWER CONTROL | control the power |
| 8 | TRIAC1&TRIAC2 | MOTOR CONTROL | control to Motor (right&left) |
| 9 | CN7 | | |

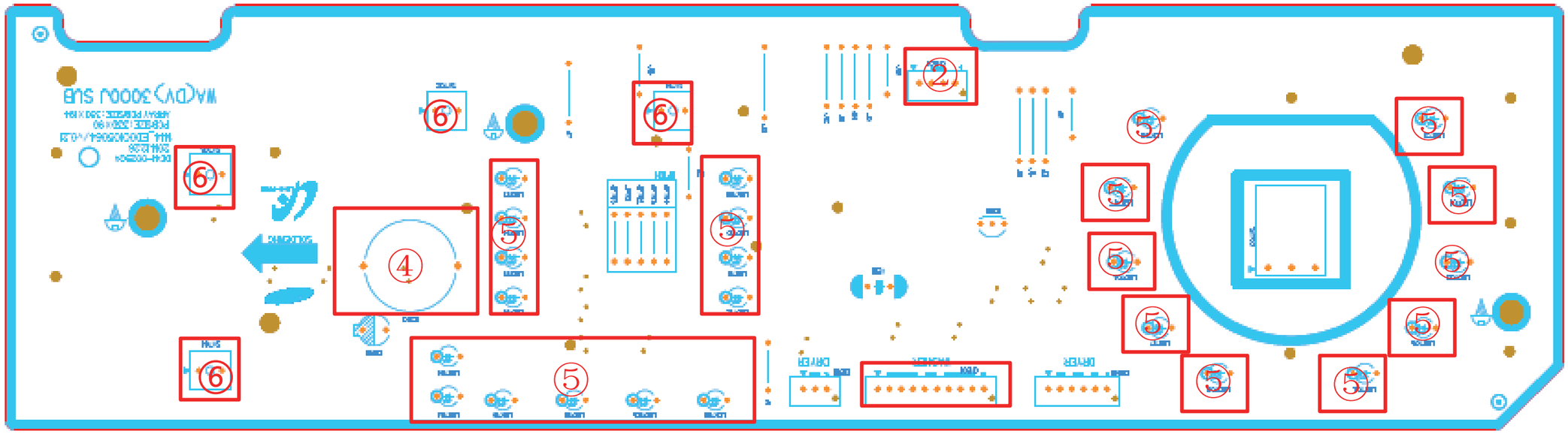
## 5-2. DETAILED MANUAL FOR CONNECTOR AND RELAY TERMINAL PART - MAIN PCB

► This Document can not be used without Samsung's authorization.



## 5-3. SUB PCB

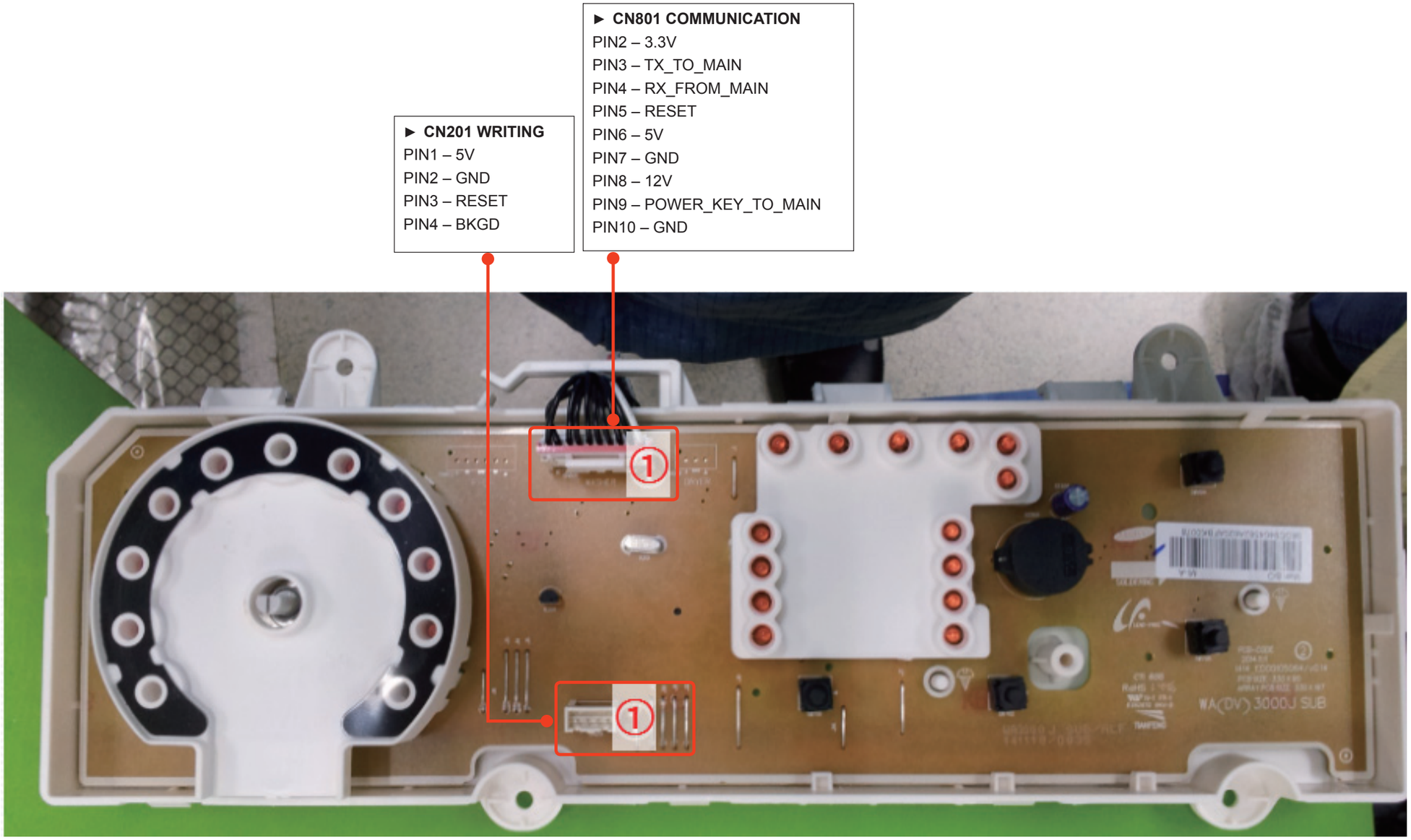
► This Document can not be used without Samsung's authorization.



| Location | Part No. | Function | Description |
|---|---|---|---|
| 1 | Micom201 | Control Function | Control  Key and LED Function |
| 2 | SW601 | Jog Dial | Jog Dial |
| 3 | CN802 | Wash communication Part | Connect wash Main PBA |
| 4 | CN501 | Conecting Sensing Part | Connecting Thermistor , Water Lavel and Cluch |
| 5 | LED | LED Lamp | Display Function |
| 6 | BZ601 | Buzzer | Making a sound |
| 7 | SW701~SW708,SW201 | Switch | Operating or changing Function |
| 8 | DSP702 | LED Display | Display Funciton |

## 5-4. DETAILED MANUAL FOR CONNECTOR TERMINAL PART - SUB PCB

► This Document can not be used without Samsung's authorization.



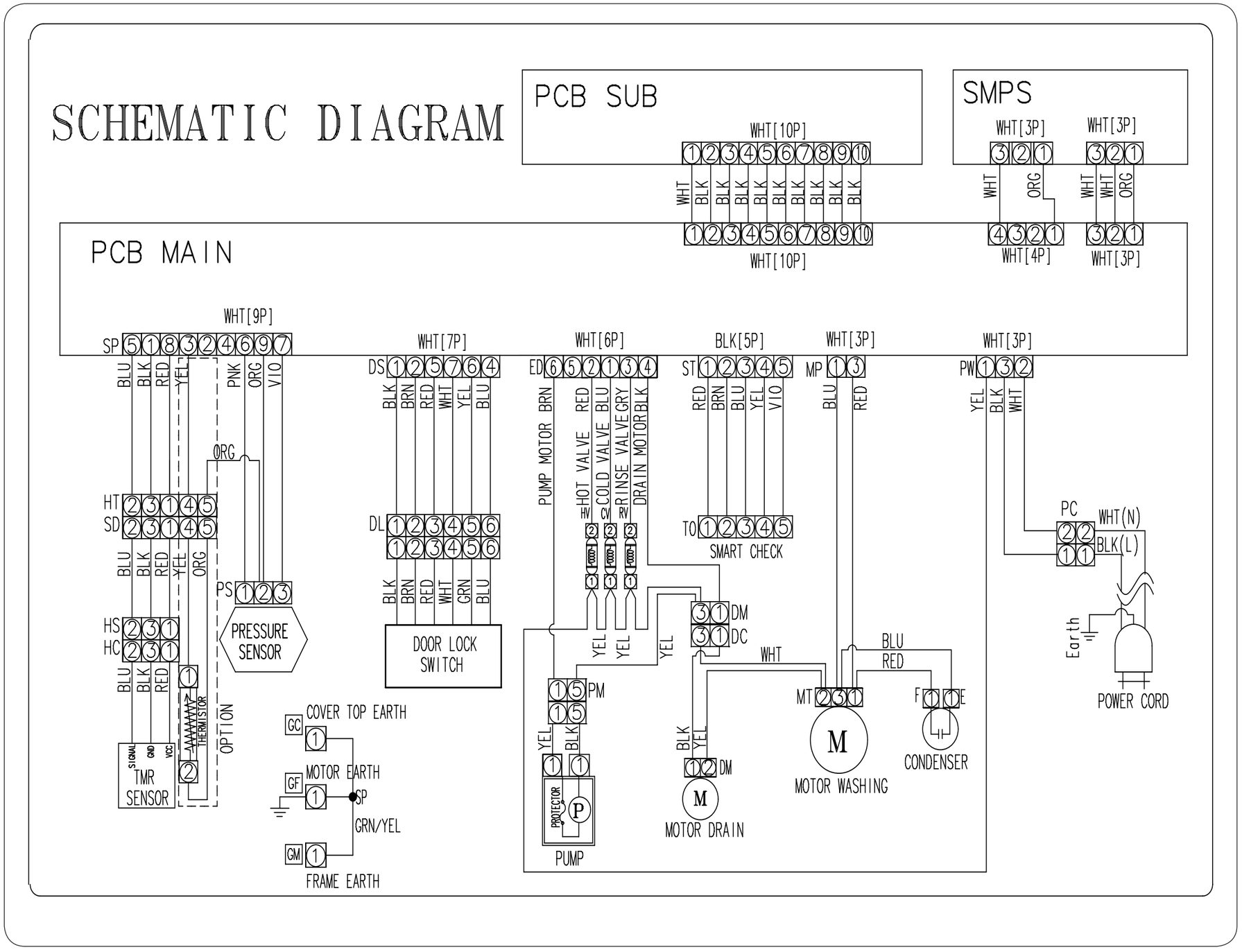
# 6. WIRING DIAGRAM

## 6-1. WIRING DIAGRAM

► This Document can not be used without Samsung's authorization.

### REFERENCE INFORMATION

| | |
|---|---|
| BLK | BLACK |
| BLU | BLUE |
| GRN | GREEN |
| GRY | GRAY |
| NTR | NATURAL |
| ORG | ORANGE |
| PNK | PINK |
| RED | RED |
| SKYBLU | SKYBLUE |
| VIO | VIOLET |
| WHT | WHITE |
| YEL | YELLOW |



## 7-1. MODEL NUMBER NAMING RULES

| ① | | ② | | ③ | ④ | ⑤ | | | ⑥ | ⑦ | ⑧ | ⑨ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Product Type | | Capacity (by Market) | | Intro. Year | Series | Feature Table | | | Intro. Region. or TYPE | Color | | Buyer | |
| | | | | | Grade | F-Code 1 | F-Code 2 | F-Code 3 | | Color Code | | | |
| W | A | 4 | 0 | J | 3 | 0 | 0 | 0 | A | W | / | A | 2 |

① **Product type (CAN NOT CHANGE)** : Auto Washing machine (SAMSUNG' s Guide Line)

② **Market Claim Capacity** : 4.0 cu.ft

③ **Intro. Year** : J – Intro.Year: 2015

④ **Series** : Grade 3 : High

⑤ **Feature Table** : 0 : Premium/Hot-Cold water
0 : AC Motor
0 : Drain Pump

⑥ **Intro. Region. or TYPE** : A – N.America

⑦ **Color** : W – WHITE

⑧ / : CBU

⑨ **Buyer** : A2 : USA

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